AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

14. Spinal osteosynthesis device comprising:

at least two bone-anchoring elements; and

means for longitudinally connecting the at least two bone-anchoring elements;

each of the at least two bone-anchoring elements comprising:

a head shaped so as to allow grasping with a screwing tool;

a threaded shank extending from the head, and

a tightening element which can be fitted onto the threaded shank to immobilize an assembly comprising the means for longitudinally connecting and a corresponding one of said at least two bone-anchoring elements,

wherein the threaded shank has a ball end, the head of each of the at least two bone-anchoring elements having an opening into a recess defined by an approximately hemispherical interior surface sized to receive the ball end of the threaded shank, the head having a hemispherical exterior surface, the interior and exterior surfaces defining a wall therebetween, wherein the wall tapers as it approaches the opening; and

wherein the interior surface is continuous throughout an entirety of the recess.

15. canceled.

21. canceled.

25. canceled.

31. Spinal osteosynthesis device comprising:

at least two bone-anchoring elements; and

means for longitudinally connecting the at least two bone-anchoring elements;

each of the at least two bone-anchoring elements comprising:

a head shaped so as to allow grasping with a screwing tool, the head having an opening into a recess defined by an approximately hemispherical interior surface;

a first threaded shank with a ball end extending from the head, the recess of the head being sized to receive the ball end of the first threaded shank;

a second threaded shank rigidly extending from the head opposite the recess; and

a tightening element which can be fitted onto the first threaded shank to immobilize an assembly comprising the means for longitudinally connecting and a corresponding one of said at least two bone-anchoring elements,

wherein the head has a hemispherical exterior surface, the interior and exterior surfaces defining a wall therebetween, wherein the wall is integral with the second threaded shank;

wherein the wall tapers as it approaches the opening; and

wherein the interior surface is continuous throughout an entirety of the recess.

32. The spinal osteosynthesis device of claim 31, wherein the wall closely surrounds the ball end on a major surface of the ball end.

33. The spinal osteosynthesis device of claim 31, wherein the opening in the head has a diameter that is smaller than a maximum diameter of the ball end.

34. The spinal osteosynthesis device of claim 14, wherein the head is shaped to have an outline such that, when fitted into a correspondingly shaped cavity in a tool, rotation of the tool causes rotation of the head.

35. The spinal osteosynthesis device of claim 31, wherein the head is shaped to have an outline such that, when fitted into a correspondingly shaped cavity in a tool, rotation of the tool causes rotation of the head.